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BRUCE H. TROXELL
SUITE 1404
5205 LEESBURG PIKE
FALLS CHURCH, VA 22041

EXAMINER	
PLUMMER, ELIZABETH A	
ART UNIT	PAPER NUMBER
3635	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/676,114	MAO, LO	
	Examiner	Art Unit	
	ELIZABETH A. PLUMMER	3635	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *26 September 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3,4,6,7,9-15 and 17-24* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1, 3-4, 6-7, 9-15, and 17-24* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *02 October 2003* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Applicant's amendments and arguments received 09/26/2007 have entered and considered. Claims 2, 5, 8, and 16 have been canceled. Claims 23 and 24 have been added. An examination of pending claims 1, 3-4, 6-7, 9-15, and 17-24 is herein presented.

Drawings

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the use of a spring isolator in a system wherein the supporting member is a hollow member and the supported member is received in the supporting member must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New

Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

2. Claims 18 and 19 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Regarding claims 18 and 19, the limitation of the supporting member being provided with the shape of a non-prismatic cross section is already provided in lines 22-23).

3. Regarding claim 17, the phrase "or the like" renders the claim(s) indefinite because the claim(s) include(s) elements not actually disclosed (those encompassed by "or the like"), thereby rendering the scope of the claim(s) unascertainable. See MPEP § 2173.05(d).

4. Claim 17 is objected to under 37 CFR 1.75 as being a substantial duplicate of claim 3. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

Claim Rejections - 35 USC § 112

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 1, 3-4, 6-7, 9-15 and 17-24 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

7. The claims are generally narrative and indefinite, failing to conform with current U.S. practice. They appear to be a literal translation into English from a foreign document and are replete with grammatical and idiomatic errors. Some examples of problems:

a. Regarding claim 1, lines 3-4 and 5, the phrase "at a joint in a way of moment resistance" is confusing. What is intended by "in a way of moment resistance"? Is it creating moment resistance? Is it capable of generating moment resistance? Is it in the way of moment resistance? For purposes of examination it is assumed that the joint is capable of generating moment resistance.

b. Regarding claim 1, line 7, the phrase "which endures moment and generates deformation" is confusing. As written, it seems as if the object is continuously enduring a moment and generating deformation. However, from the following lines it appears the applicant intended to claim that the support members generate deformation wherein when the supporting member is subjected to a moment.

c. Regarding claim 4, the phrase, "which are at the supporting member" is confusing. How are spots at a member? Are the spots adjacent to the member?

Along the member? Besides the member? For purposes of examination it is assumed that the plurality of spots are located along the supporting member.

d. Regarding claims 13 and 20, the phrase "the supported member contact with the supporting member" is confusing and grammatically incorrect. For purposes of examination it is assumed that the supported member is in contact with the supporting member.

e. Regarding claims13 and 20, the phrase "but the supported member endures a bending moment and occurs displacement" is confusing. For purposes of examination it is assumed that the phrase intended to be a conditional phrase such that when the supported member is subjected to a load the supported member endures a bending moment and displacement occurs.

f. Regarding claim 23, the phrase "at a joint in a way of moment resistance" is confusing. What is intended by "in a way of moment resistance"? Is it creating moment resistance? Is it capable of generating moment resistance? Is it in the way of moment resistance? Is it in a configuration that is moment resistant? For purposes of examination it is assumed that the joint is capable of generating moment resistance.

g. Regarding claims 23 and 24, the phrase "which endures moment and generates deformation" is confusing. If it is not continuously enduring a moment and generating deformation the phrase should be written as a functional statement, such as capable of enduring a moment and generating deformation.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

9. Claims 1, 4, 6, 7, 9, 11, 13-15, and 18-24 are rejected under 35 U.S.C. 102(e) as being anticipated by Cook et al. (US Patent 6,865,791).

a. Regarding claim 1 as best understood, Cook et al. discloses a bending moment resistant structure comprising a plurality of supported members (diagonal members 2), each of the supported members having two ends with at least one of the two ends being joined to a connection element (vertical members 3) at a joint capable of moment resistance; a plurality of supporting members (19), each of the supporting members having two ends with one of the of the two ends being joined to the connection element in a joint capable of moment resistance (Figs. 6a-6l) and another one of the two ends being disposed at a support spot (adjacent 21) of the respective supported member, the supporting members capable of enduring a moment and generating deformation; whereby if the structure is subjected to a load and the supported member endures a moment, the supporting member is supported by the supported member by the supported member at the support spot with the supporting member resisting

deflection of the supported member such that the supporting member and supported exert a respective action to each other, resulting in the joint enduring a bending moment and intensifying a bending moment resistance at the joint and the action to the supported member reduces a bending moment of the supported member at the support spot and the bending moment value at the joint becomes uniform (abstract; column 3, lines 22-37; column 3, lines 49-55; column 4, lines 14-27; column 5, lines 15-17); wherein the supporting member is a hollow member (Figs. 6a-6l) with a cross section shaped like a round tube and the supported member having a corresponding shape, wherein the supporting member is provided with the shape of a non-prismatic cross section.

b. Regarding claim 4 as best understood, a plurality of spots (adjacent 21) which are along the supporting member are supported for two or more deflection directions (supported for 360 degrees around).

c. Regarding claim 6 as best understood, the supporting member is disposed at the lateral sides of the supported member (Fig. 6a-6l)

d. Regarding claim 7 as best understood, the supported member is a round tube and the supporting member is provided with a corresponding shape (Figs. 6a-6l).

e. Regarding claim 9 as best understood, an isolator (6) is disposed between the supported member and the supported member at the support spot and connected to either the supported m ember or the supporting member (Fig. 3a-3e; column 4, lines 50-54).

f. Regarding claim 11 as best understood, the material of the isolator can be elastic (column 2, lines 66-67).

g. Regarding claims 13 and 20 as best understood, the supported member can be in contact with the supporting member (via the SMA shims) with no action inbetween when the shim when the supported member is not subjected to a load, and wherein when the supported member is subjected to a load it endures a bending moment and displacement occurs and results in an action between the supported member and the supporting member (column 3, lines 19-37; column 4, lines 24-27; column 5, lines 55-59; column 6, lines 41-54).

h. Regarding claims 14 and 21 as best understood, a clearance is between the supported member and supporting member (Fig. 3a-3e) but the support member contacts with the supported member (via SMA shims) and when a load is exerted on a supported member deflection occurs due to a bending moment being endured by the supported member and a reaction is produced between the supporting member and the supported member (column 3, lines 19-37; column 4, lines 24-27; column 5, lines 55-59; column 6, lines 41-54).

i. Regarding claims 15 and 22 as best understood, the supporting member and the supported member at the support can have an action already in between (abstract, lines 15-18; column 7, lines 1-26) when the frame is not subjected to a load, and when the supported member is subjected to a load, the action changes due to enduring a bending moment and occurring deflection (column 1, lines 35-55).

j. Regarding claims 18 and 19, the supporting member is provided with the shape of a non-prismatic cross section (Fig. 6a-6l).

k. Regarding claim 23 as best understood, Cook et al. discloses a bending moment resistant structure comprising a plurality of supported members (diagonal members 2), each of the supported members having two ends with at least one of the two ends being joined to a connection element (vertical members 3) at a joint capable of moment resistance; a plurality of supporting members (19), each of the supporting members having two ends with one of the of the two ends being joined to the connection element in a joint capable of moment resistance (Figs. 6a-6l) and another one of the two ends being disposed at a support spot (adjacent 21) of the respective supported member, the supporting members capable of enduring a moment and generating deformation; whereby if the structure is subjected to a load and the supported member endures a moment, the supporting member is supported by the supported member by the supported member at the support spot with the supporting member resisting deflection of the supported member such that the supporting member and supported exert a respective action to each other, resulting in the joint enduring a bending moment and intensifying a bending moment resistance at the joint and the action to the supported member reduces a bending moment of the supported member at the support spot and the bending moment value at the joint becomes uniform (abstract; column 3, lines 22-37; column 3, lines 49-55; column 4, lines 14-27; column 5, lines 15-17); wherein the supporting member and the supported

member can already have an action inbetween before the frame is subjected to a load (abstract, lines 15-18; column 7, lines 1-26) and when the supported member is subjected to a load, the action changes due to enduring a bending moment and deflection occurs (column 1, lines 35-55).

m. Regarding claim 24 as best understood, Cook et al. discloses a bending moment resistant structure comprising a plurality of supported members (diagonal members 2), each of the supported members having two ends with at least one of the two ends being joined to a connection element (vertical members 3) at a joint capable of moment resistance; a plurality of supporting members (19), each of the supporting members having two ends with one of the of the two ends being joined to the connection element in a joint capable of moment resistance (Figs. 6a-6l) and another one of the two ends being disposed at a support spot (adjacent 21) of the respective supported member, the supporting members capable of enduring a moment and generating deformation; whereby if the structure is subjected to a load and the supported member endures a moment, the supporting member is supported by the supported member by the supported member at the support spot with the supporting member resisting deflection of the supported member such that the supporting member and supported exert a respective action to each other, resulting in the joint enduring a bending moment and intensifying a bending moment resistance at the joint and the action to the supported member reduces a bending moment of the supported member at the support spot and the bending moment value at the joint becomes

uniform (abstract; column 3, lines 22-37; column 3, lines 49-55; column 4, lines 14-27; column 5, lines 15-17); wherein an isolator (9) is disposed between the supporting member and the supported member at the support spot and the connected to either the supported member or the supporting member (Fig. 3a-3e), wherein the supporting member and the supported member can already have an action inbetween before the frame is subjected to a load (abstract, lines 15-18; column 7, lines 1-26) and when the supported member is subjected to a load, the action changes due to enduring a bending moment and deflection occurs (column 1, lines 35-55).

10. Claims 1, 9 and 10 are rejected under 35 U.S.C. 102(e) as being anticipated by Houghton (US Patent 6,591,573).

a. Regarding claim 1 as best understood, Houghton discloses a bending moment resistant structure comprising a plurality of supported members (122, 121, 123), each of the supported members having two ends with at least one of the two ends being joined to a connection element (116) at a joint capable of moment resistance; a plurality of supporting members (131,126), each of the supporting members having two ends with one of the of the two ends being joined to the connection element in a joint capable of moment resistance (Fig. 23) and another one of the two ends being disposed at a support spot (adjacent 186) of the respective supported member, the supporting members capable of enduring a moment and generating deformation; whereby if the structure is subjected to a load and the supported member endures a moment, the

supporting member is supported by the supported member by the supported member at the support spot with the supporting member resisting deflection of the supported member such that the supporting member and supported exert a respective action to each other, resulting in the joint enduring a bending moment and intensifying a bending moment resistance at the joint and the action to the supported member reduces a bending moment of the supported member at the support spot and the bending moment value at the joint becomes uniform (column 1, lines 57-63; column 2, lines 3-4); wherein the supporting member is a hollow member (Fig. 23) with a cross section shaped like a square tube and the supported member having a corresponding shape, wherein the supporting member is provided with the shape of a non-prismatic cross section.

b. Regarding claim 9, an isolator (186) is disposed between the supporting member and the supported member at the support spot and is connected to the supported member (Fig. 23).

c. Regarding claim 10, the material of the isolator is a rigid material comprising a steel plate (column 3, lines 62-67).

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

12. Claims 3, 12 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cook et al. (US Patent 6,865,791).

a. Regarding claims 3 and 17 as best understood, Cook et al. discloses the supporting members are disposed on opposite side of the supported member (Fig. Fig. 4a, 4b, 7). Cook et al. does not disclose the supported member being H shaped steel or I shaped steel with a cross section of two flanges and one web joined to the two flanges. However, it would have been a matter of obvious design choice to form the sported member as H or I shaped steel with a cross section of two flanges and one web joined to the two flanges, as such a modification would have involved a mere change in shape of a component. A change in shape is generally recognized as being within the level of ordinary skill in the art. In re Dailey, 149 USPQ 47 (CCPA 1966).

b. Regarding claim 12 as best understood, Cook et al. discloses the isolator can be a shape memory alloy (SMA) which can be formed in any shape. As it is the function of the SMA to expand and contract, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Cook et al. to use a spring shaped SMA isolator in order to facilitate the movement of forces between the supporting member and supported member.

Response to Arguments

13. Applicant's arguments with respect to claims 1, 3-4, 6-7, 9-15, and 17-24 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ELIZABETH A. PLUMMER whose telephone number is (571)272-2246. The examiner can normally be reached on Monday through Friday, 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Chilcot can be reached on (571) 272-6777. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jeanette E Chapman/
Primary Examiner, Art Unit 3633

/E. A. P./

Examiner, Art Unit 3635